Table
Patients Characteristics and Outcomes by Diagnosis

Disease type (N)	Median (range) age	Median (range) HCT-CI	Remission status	Median (range) prior regimens / N prior auto	Regimen intensity	PFS
Follicular (n = 13)	52 yrs (29-63)	1 (0-4)	5 CR, 5 PR, 3 SD	4 (2-8) / 3/13 (23%)	3 MA 10 NMA	3-yr: 62%
Diffuse large cell (n = 13)	53 yrs (35-64)	2 (0-6)	8 CR, 4 PR, 1 SD	4 (1-7) / 3/13 (23%)	4 MA 9 NMA	3-yr: 23%
Mantle cell (n = 5)	57 yrs (37-71)	2 (1-6)	5 CR	3 (2-4) / 4/5 (80%)	5 NMA	2 disease-free (29-70 months)
Hodgkins (n = 15)	35 yrs (20-50)	3 (0-5)	10 CR, 3 PR, 1 SD, 1 PD	4 (2-13) / 12/15 (80%)	8 MA 7 NMA	3-yr: 47%
T-cell rich B-cell NHL (n = 1)	38 yrs	2	PR	7 / No auto	1 MA	Died at 1.5 months

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Clinical Outcomes of Multiple Myeloma Patients with TP53 Gene Deletion after Autologous Stem Cell Transplantation: The MD Anderson Cancer Center Experience

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Introduction: Deletion of *TP53* gene mapped to 17p13, which can be identified by conventional cytogenetics or fluorescent in situ hybridization (FISH), is associated with poor outcome in multiple myeloma (MM), even after the introduction of novel agents and the use of high-dose chemotherapy and autologous (auto) or allogeneic (allo) hematopoietic stem cell transplantation (HCT). Here we report the outcomes of patients (pts) with *TP53* deletion (del) on FISH studies who underwent an auto- or allo-HCT at our institution.

Methods: We identified 39 pts with MM who had *TP53* del on FISH studies prior to HCT at our institution between 2008 and 2014, and compared their outcomes to a matched control group (CG) (n=117) without *TP53* del who were treated during the same time period. Matching was based on age and response to the last therapy prior to HCT.

Results: Patient characteristics are summarized in the attached Table. The ISS stage at diagnosis was available for 27 pts in the *TP53* group (*TP53* Grp), 52% of whom had stage III disease. Most pts in the *TP53* Grp had received a proteasome inhibitor (PI) (95%) or an immune modulatory agent (IMiD) (72%) prior to HCT. The response to last therapy was either stable or progressive disease in 36% of patients in both groups. The median follow-up intervals were 16 and 26 months (m) for the *TP53* Grp and CG, respectively. The median overall survival (OS) in the *TP53* Grp was 21 m vs 57 m in the CG; 2-year OS in the *TP53* Grp was 46% vs 86% in the CG (both, $P<0.001$). Median progression-free survival (PFS) in the *TP53* Grp was 8.5 m vs 28 m in the CG; 2-year PFS in the *TP53* Grp was 18% vs 56% in the CG (both, $P<0.001$) (Figure 1). Three of the five pts in the *TP53* Grp who received an allo-HCT relapsed post-HCT, and none died of non-relapse causes. In the *TP53* Grp, univariate analysis identified a trend toward a higher risk of disease progression in pts who underwent HCT with relapsed disease (HR=2.4, 95% CI 0.99-5.8, $P=0.053$). Otherwise, age, response prior to HCT, time from diagnosis to HCT, ISS stage, allo vs auto HCT, conditioning regimen, cytogenetics, and prior exposure to PI or IMiD were all non-significant factors. On multivariate analysis for the entire cohort, *p53*del (HR=3.2, 95% CI 1.9-5.3, $P<0.001$) and relapsed disease at HCT (HR 2.2, 95% CI 1.3-3.6, $P=0.002$) were independent factors associated with a higher risk of early progression.

Conclusions: In the era of PI, IMiD, and HCT, *TP53* del remains a poor prognostic factor in MM. Relapsed disease at the time of HCT was associated with a higher risk of progression. Novel approaches and perhaps early allogeneic HCT require evaluation in this high-risk population.

Table

	TP53 Grp	CG
Median age, years (range)	58 (34-69)	58 (31-79)
Sex (M/F)	24/15	62/55
Disease status at time of HCT, %		
Relapse	64	42
Other	36	58
HCT type, %		
Auto	87	97
Allo	13	3
Diagnosis to HCT >12 months, %	46	42
Maintenance therapy, %	59	62

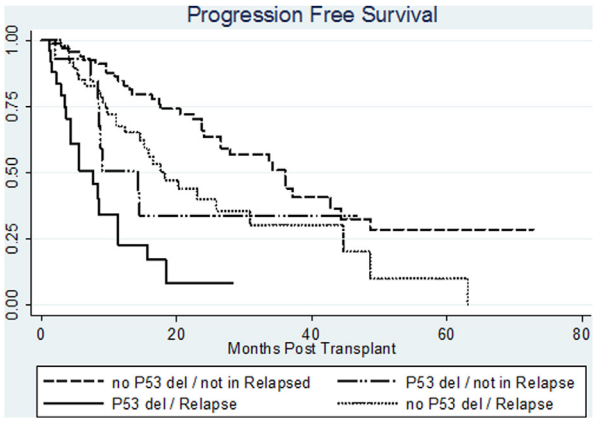

Figure. Progression free survival.

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Haploidentical Stem Cell Transplantation (HAPLO-HSCT) with Busulfan (BUX) Based Reduced Intensity Conditioning (RIC) Regimens and Post-Transplant Cyclophosphamide (PT-CY) as GVHD Prophylaxis in Patients with Relapsed or Refractory Hodgkin Lymphoma (HL)

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